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15CV653

Sixth Semester B.E. Degree Examination, D 441
n.2020

Alternative Building Materials

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Discuss the environmental issues concerned to the building materials. (08 Marks)
- b. Compute the energy embodied in a wall made of burnt bricks with cement mortar 1:6. The wall is 5x3x0.23m. Take energy in burnt Brick is 4.25 Mi; energy in cement mortar 1:6 as 1296 MJ. If this wall is build with SMB of size 230x190x100mm using CM 1:6. What is the saving in energy in building material if energy per block is 2.60 Mi. (08 Marks)

OR

- 2 a. Illustrate the concept of green buildings and rating systems as per IGBC. (08 Marks)
- b. Distinguish the various environmental friendly and cost effective building technologies. (08 Marks)

Module-2

- 3 a. Discuss the characteristics of building blocks used for wall construction. (08 Marks)
- b. Elaborate the various step involved in manufacturing of SMB blocks. (08 Marks)

OR

- 4 a. What are the various factors affecting the compressive strength of masonry? Explain them briefly (08 Marks)
- b. Design an interior cross wall axially loaded of a 2 storied building to carry 100 mm thick RCC slabs with 3m ceiling height. The wall is unstiffened and it supports 2.65m wide slab. L.L. on the roof is 1.5 kN/m², L.L. on floor = 2 kN/m² weight of 80mm thick terrace = 1.96 kN/rr. Weight of floor finish = 0.2 kN/m². Take density of concrete = 25 kN/m³ (08 Marks)

Module-3

- 5 a. Explain the process of making Lime Pozzolona Cement. (08 Marks)
- b. List the different manufacturing process of fibre reinforced plastics and explain any two with neat sketch. (08 Marks)

OR

- 6 a. Explain the different types of fibres used in fibre reinforced concrete. (08 Marks)
- b. List the various types of agro and industrial wastes and explain its properties. (08 Marks)

Module-4

- 7 a. Explain the alternative technologies used for foundation and walls construction. (08 Marks)
- b. Explain Ferrocement and Ferroconcrete. (08 Marks)

OR

- 8 a. Explain the filler slab concept of alternative roofing system (08 Marks)
- b. Explain the Mivan construction technique. (08 Marks)

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Module-5

- 9 a. Explain the equipments used for the compaction of concrete. (08 Marks)
b. Discuss the equipments used for production of SMB locks. (08 Marks)

OR

- 10 a. What are the moulds and methods for production of precast elements? (08 Marks)
b. Explain the cost saving techniques adopted in buildings. (08 Marks)

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